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Entrepreneurship in vocational education: A case study of the Brazilian context

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Abstract

Vocational entrepreneurship education is associated with specific techniques and teaching methods, which include face-to-face student contact and knowledge alignment with labour market needs. We argue that entrepreneurship education provides particular benefits in different educational conditions and modes because it allows students to develop entrepreneurial behaviour for different vocations. This paper presents the results of a study involving students enrolled on technical courses at a public institution in Brazil. The study investigates how vocational teaching and learning conditions such as entrepreneurial experiences and profile of lecturers, affect student's attitudes and perceptions towards entrepreneurship education in a vocational teaching context.

Keywords: Entrepreneurship; entrepreneurship education; vocational education.

Introduction

Entrepreneurship is included in many socio-economic policies of governments seeking to develop an economy through new business formation and aiming to secure access to sustainable employment and income for the wider society (Flory; Andreassi and Teixeira, 2013). In addition to policy development, it is widely considered that a national culture involving new business formation and entrepreneurship brings opportunities for social renewal as well as economic enhancement. Subsequently, this is a viewpoint integral to the notion that entrepreneurship education is a way of providing a route to new business creation and development of entrepreneurial skills among vocational workers (Katz, 2003;

Fayolle, 2013; Jones and Iredale, 2014; Blenker et al, 2014). The academic world has rigorously investigated entrepreneurship education in higher education (Bécharde and Grégoire, 2005; Jones et al, 2012; Rae et al, 2012; Storen, 2014) and as Fayolle comments 'Although most entrepreneurship programmes and courses are offered at the university level, more and more initiatives and interventions are emerging in primary and secondary schools' (Fayolle, 2013:692). While entrepreneurship education studies in the main, reflect activity and programmes in higher education, what do we know about entrepreneurship education in other institutional and programme contexts? Undoubtedly the practice of entrepreneurship is situated in a number of contexts, therefore there is scope to investigate vocational programmes and specifically the types of conditions required to deliver vocational entrepreneurship education (Figueiredo, Nery and Figueiredo, 2008; Yu, 2014).

Both the UK and Brazil strive to drive policy forward, policy that seeks to embed entrepreneurship education in public universities and enable it through a strategy for sustainable social and economic wellbeing, yet both economies are very different, (GEM-Brazil, 2014). To date little evidence on entrepreneurship education activity in the Brazilian context is available and even less known about entrepreneurship education in the classroom context. Fostering entrepreneurship education at each level of education, primary, secondary, tertiary and higher, as discussed by Smith and Paton (2014), offers greater inclusivity and accessibility when embedded in the curriculum of educational programmes and in countries like Brazil, this approach is very new but there is evidence to suggest that change is occurring. In recent times, a public initiative was available across different levels and types of education from the Ministry of Education of Brazil through Pronatec Entrepreneur Program, providing

economic and social development through the processes of entrepreneurial education. An initiative driven by the National Program for Access to Technical Education and Employment and created by the Ministry of Education of Brazil, through Law 12,513 / 2011, it has the objective of expanding, internalising and democratising the supply of vocational and technical education courses in the country (Brazil, 2011).

Of course at more local levels the effects of nationally driven efforts can be disparate so current efforts in Brazil to engage in entrepreneurship education mean that it is offered to all those who register for vocational education programmes. Now, for many citizens across Brazil, entrepreneurship education embedded in vocational education offers a route towards increased sustainable incomes and poverty avoidance. Brazilian educational policies, especially in relation to Law No. 9.394/96, called 'Guidelines and Bases of National Education Law' define vocational education as training for students to work in a highly competitive labour market and tackle daily challenges from modern organisations thus providing a general and technical education to enable students to overcome these obstacles. In particular, the creation of Federal Institutes of Education, Science and Technology in 2008, placed emphasis on professional, technical and vocational education, featuring education policy as key to social and work improvement in Brazil.

Without doubt, the connection between teaching entrepreneurship and the context of vocational education is embedded in Brazilian law, so its main objective in moving the policy narrative forward is to conduct and promote applied research, cultural development, entrepreneurship, co-operation and scientific and technological development. Attempts to promote applied research, serves to demonstrate the need to seek new paradigms for teaching and learning in Brazilian education (Brazil,

2008). Responses involve educational institutions seeking to provide educational methodologies for students that underpin successful learning in different industrial market and vocational contexts (Pache and Chowdhury, 2012), and at the same time an understanding that entrepreneurship education outcomes should meet the social and economic needs of all stakeholders involved, pupils, students, families, organisations and society (Fayolle, 2013). Therefore, to contribute to an understanding of the conditions for vocational entrepreneurship education in the context of Brazil, this article reports on a study into the necessary surroundings and settings. Investigations include student perceptions towards the entrepreneurial attitude of their lecturers (Lenzi, 2008, Rezaei-Zadeh *et al.*, 2014), teaching techniques and methods such as business plans and reflection (Carrier, 2007), case studies and group discussions, (Samwel-Mwsalwiba, 2010) and enquiry into how positively these variables influence the attitude of students towards entrepreneurial activity. Using a qualitative and quantitative data collection instrument, based on Martins, (2010), and testimonials from students registered at a public institution delivering vocational education, this study offers insight to entrepreneurship education for the vocational student. This paper continues by highlighting the significant changes that have reshaped the Brazilian education system, thereafter consideration of entrepreneurship education and how it creates entrepreneurial learning conditions in vocational educational systems, concludes the discussion.

Vocational Education in Brazil

Vocational education in Brazil, also referred to as professional, technical or technological education, integrates the different levels and modalities of education such as lifelong learning, secondary education and higher education (Brazil, 1996). It

provides students with development opportunities in various skills and competencies for work, science, technology and culture. Vocational education underpins social relations and labour resources that in turn affect value creation in the technological industries (Brazil, 1996). This domain of Brazilian education has been shaped by socio-economic changes and the need to prepare workers for jobs. It began in 1909 with the creation of nineteen Apprentice's schools, and aimed to educate the orphans, poor and destitute of fortune, removing them from the streets (Kuenzer, 2007). Then in 1942, Brazil had a major boost when it experienced regulation; technical industrial, commercial and agricultural levels of education created by Capanema Reform, making vocational education compatible with secondary mainstream education. This same reform structured industrial training, and reformed the commercial education and created the SENAI - National Service of Industrial Learning (Dallabrida, 2009).

In 1956 (under President Juscelino Kubitschek government) there was a rapprochement between government and production sectors, so that there were policies to encourage vocational training for activities in seasonal sectors. Later, another structural reform of the Brazilian basic education was the result of technical and financial cooperation developed between the Ministry of Education and Culture (MEC) and the US Agency for International Development (USAID), between the years 1963 and 1971 (Brazil, 2016). This agreement aimed at the professionalisation of secondary education, aiming to unify the old: primary and secondary education system, and consequently seeking to eliminate differences between the secondary-level training - agricultural, commercial, industrial and others. In the 1970's the Federal Centre of Technological Education - CEFET - institution that represented a new paradigm in education played a key role in developing vocational training in the

1980s and 1990s, when Brazil went through an industrial development period. Law 9.394 / 96, known as the Law of Guidelines and Bases - LDB has a separate chapter on Vocational education. In 1997, it created Professional Education Expansion Program - PROEP, a program that, over a decade, enabled integration of vocational education with basic education, through the education program for youth and adults. Finally, it was enacted Law No. 11,892 of December 29, 2008, which is the Federal Institutes of Education, Science and Technology, which signalled a new phase in vocational and technological education in Brazil (Brazil, 2008). Its creation brought a new perspective in the Brazilian educational environment. Its main objectives included breaking down the barriers between scientific (academic) and technical education and making a link between the labour market, science and culture from the perspective of human emancipation (Pacheco, 2011). The different modalities of vocational education are presented in Table 1.

Insert Table 1 about here:

Based on the evidence it is possible to argue that entrepreneurship education provides different benefits in different educational modes because it encourages students to create entrepreneurial behaviour appropriate for different levels of vocational education (Onstenk, 2003). The development of entrepreneurial skills in vocational education can not only be aligned to the demands of the labour market, but also for creation of new ventures and for development of projects and solutions within industry specific organisations (Guyen, 2013; Hietanen, 2015). However, the idea that vocationally specific conditions beyond simply the modality within education systems are of particular importance, needs to be unpacked further; specifically learning methods and teaching roles and in this case the entrepreneurial profile of vocational lecturers.

Entrepreneurship Education and Lecturer's Role

Teaching methods and the world of work have changed significantly over time, specifically the need for enhanced qualifications in the productive workforce has evolved and in the case of Brazil, a restructuring of the production sectors from 1990. The type of training required is no longer the mechanistic phases Taylorist/Fordist so well associated with the early twentieth century, which developed capacity to exercise a job in particular, but instead a specialisation that allows the subject to learn through intellectual activities and cognitive processes, which now articulates as the scientific knowledge and ways of doing (Kuenzer, 2003). This paradigm shift is challenging because:

‘the development of entrepreneurship, entrepreneurial and enterprising behaviour are great challenges of this post-industrial era. It is a challenge to global society, since it involves the breaking of paradigms consolidated throughout the last century’ (Fonseca Junior and Hashimoto, 2014:12).

According to Kuratko (2005), the main objective of entrepreneurship education is its distinction from the typical business education, which is the creation and opening of a new business as being a very different practice from management. Thus, entrepreneurship education should address this ambiguity in setting up business in new markets, and develop skills that can be used to address the challenges posed by the labour market. Samwel-Mwasalwiba, (2010) describes the generic objectives of entrepreneurship education as the growth of the spirit, culture and entrepreneurial attitudes; creating new businesses and jobs; contribution to society and; stimulation of entrepreneurial skills. When dealing with education goals, Martins (2010) emphasises that education should include; awareness, instigate and contribute to

the formation of creative people, entrepreneurs and high commitment to the collective development.

From an ideological point of view, to Drewinski (2009) entrepreneurship education has two perspectives. Firstly, that entrepreneurship education provides the student with the necessary skills and knowledge to enhance their chances of inclusion in the formal labour market and avoidance of the informal alternative to work. Throughout Brazil, according to the National Sample Survey of Households (PNAD) compiled by the Brazilian Institute of Economics of the Getulio Vargas Foundation (Ibre/ FGV), there are about 10 million informal workers who are professionals without any labour and social security contributions (Papp and Gerbelli, 2016). Secondly, that it provides the possibility of personal and professional development represented by intrapreneurship and the opportunity to be innovative within the formal workplace. Therefore, in addition to technical capacities, skills development such as those advocated by the entrepreneurial thinkers essentially need to be aligned to educational processes. In conjunction with this viewpoint, Vasconcelos et al. (2012) and Ballarine et al. (2012) find that entrepreneurial education should not follow austere and positivist methodologies that prevent creative ability and reasoning but instead increase competence, all of which are crucial in students of vocational education. This being the case means that changes in the institutional and pedagogical conditions are likely to occur through improvements in teaching processes, learning and evaluation. In addition, training lecturers to enable them to create learning opportunities from formal and informal educational experiences and environments contributes to the broader idea of creating entrepreneurial learning conditions in vocational context (Draycott and Rae, 2011). It follows that to achieve desirable teaching and learning conditions, methods should be rethought and since

Higgins, Smith and Mirza (2013) claim existence of the consensus that traditional methods of teaching and learning are simply not adequate, then there is an argument to support more research into innovative delivery methods.

Innovative and practical methods of entrepreneurship education mean student resources can and might involve practical activities based on methods that include start-up simulation, enterprise games, competitions and critical thought based on reflective practice (Neck and Greene, 2011). Spiteri and Maringe, (2014) identified four core components claiming to reflect the nature of entrepreneurship education. In their study on the perception of students towards entrepreneurial education in four institutions from UK and Malta, they concluded four key concepts:

- Methodology: Traditional education methods and entrepreneurial practice activities;
- Content: Preference for those destined to develop creativity in situations based practice;
- Evaluation: Individual work perceived as useful to deepen the learned concepts and encourage individual thinking;
- Lecturer model: Inspire students, demonstrating to be creative and have experience in business roles that support what is being taught.

In relation and of key interest to this study, the lecturer model offers an interesting concept and includes access to information by students facilitated by technology. Requirements on educators to use technology and new pedagogical approaches that can contribute to improving the understanding of concepts and applicability of knowledge-based content can, when undertaken skilfully and in some situations, enhance learning (Samwel-Mwsalba, 2010). However, most notable is the idea that to create the overall enhanced learning experience for students then the educator

themselves require forms of personal development on technological enhancements either VLE for blended learning or indeed stand-alone software, which might underpin learning outcomes within an entrepreneurship education module of learning design. Further distinctions applied to the idea of training the vocational lecturer as opposed to the non-vocational lecturer further validates the idea that the educational conditions are different. Where entrepreneurship education is situated within a vocational context then an educator's personal creativity, experience in business, sector and/or entrepreneurial profile might be considered as critical factors in relating entrepreneurship to context (Onstenk, 2003; Carrier, 2007; Martins, 2010).

In summary, little is known about entrepreneurship education in vocational education systems and particularly in economies such as Brazil, a large and socially economic complex nation (Figueiredo-Nery and Figueiredo, 2008). Not only is entrepreneurship education a policy solution for transitional economies it is also a solution to local level income generation and that income is often vocationally driven. The review of literature has established that more work is required into the different modes of entrepreneurship education especially in environments such as vocational education. It is likely that learning design, pedagogy and perceptions of all involved might influence the design of vocational entrepreneurship education perhaps calling to be less broad and institutionalised so to be applicable in different conditions according to the different vocations. As the educator or lecturer's role becomes apparent then it is important to understand better the connections with and perceptions of the vocational student particularly in context. The following section presents the methods chosen to investigate how Brazilian students perceive the entrepreneurial qualities of lectures and lecturers in vocational educational conditions.

Methodology

This paper adopts a case study strategy, since this is an integrated and limited study, focused on an isolated phenomenon or entity (case); this approach seeks to describe the phenomenon deeply (Merriam, 1998). For the same reason, Yin (2001) states that the case study 'allows an investigation to preserve the holistic and meaningful characteristics of real-life events - such as individual life cycles, organisational and administrative processes, changes in urban regions, international relations and the maturation of some sectors' (Yin, 2001:21). Being an exploratory-interpretative study, the aims include understanding the perceptions of students towards their lecturers as being entrepreneurial in vocational education settings. The case in question relates to education offered in post-secondary mode of a public institution for vocational education in the city of Curitiba, Brazil. The institution is a federal public educational institution under the Brazilian *Ministry of Education (MEC) through the Department of Vocational and Technological Education (SETEC)*. It is dedicated to education which is secondary, post-secondary, higher and lifelong (see table 1), specializing in providing free technical and technological education in different types and levels of education. The legislation governing the institution, 50% of positions should be for technical education and 25% of vacancies for undergraduate, those courses that are neglected by private educational institutions (Brazil, 2008).

The data collection instrument was based on Martins (2010) study, which, through analysis of qualitative and quantitative data investigates how the student perceives the entrepreneurial attitude of their lecturers, and teaching techniques that subsequently positively influenced student attitudes. This instrument has previously

been harnessed for use in several other studies with success (Carrier, 2007; Figueiredo-Nery and Figueiredo, 2008; Samwel-Mwsaliba, 2010; Albornoz, 2013). A questionnaire with open and closed questions was adapted for post-secondary students of vocational education and applied to five classes selected from one of the campuses of the institution in Curitiba, Brazil in November 2015. The total number of students on these courses was $n=121$, with $n=85$ responses, equating to 71% of the total. The vocational breakdown was Buildings (30%), Administration (21%), Events (20%), Mechanics (15 %) and Real Estate Transactions (14%).

Data analysis was completed through descriptive statistics and analysis of the content of the questionnaire responses. Content analysis is understood as "a set of analysis techniques of communication that uses systematic procedures and content of messages description of goals" (Bardin, 2011:44). The analysis of the results included triangulation of methods using the empirical qualitative and quantitative data as well as secondary data and literature sources, all of which provided a more comprehensive view of the results and brought a more detailed understanding of the macro-environmental factors that influence entrepreneurship education in Vocational education (Zappellini and Feuerschutte, 2015). The following section presents the findings and provides analysis of the four key areas under investigation; lecturers profile, alternative methods of teaching, teaching objectives and creative approaches teaching.

Discussion and Analysis of Results

Through the distribution of questionnaires to students of post-secondary courses, it was possible to conclude that the average age of students is 29 years old, which confirms that this level of education is more accessible for people who are looking for new opportunities and returners to educational environments. For example, in the

Real Estate Transactions course the average age was 43. This factor may have influenced the reliability of the data, given that many of these do not have high levels of competency with technology resources, so there were fewer people willing to answer the electronic form.

In line with the data of the higher education census of National Institute of Educational Studies Teixeira INEP (2015), the highest number of students are female - 56%, and in the case of this study in vocational education most students - 54% - are women. However, higher education census data cannot be extrapolated to vocational education, which has its own peculiarities. Similarly, the data available in INEP about vocational education are dated 1999, and therefore simply cannot express the reality of the current vocational educational conditions. Furthermore, the establishment of the Federal Network of Scientific Technological Education through Law No. 11,892 of 29/12/2008, totally changed the educational landscape in the country. Therefore, it is clear that any new data is difficult to compare with historical data, which means descriptions of current educational conditions are of particular interest.

The institution, which is the case of this study, includes in its mission and values *Innovative Entrepreneurship* and therefore the teaching of entrepreneurship is perceived as being, relevant by 71.9% of respondents, critical to the formation of new business and by 23.4% important for training. Due to the wide spread media attention attracted to entrepreneurship concepts and the popularity of the subject in academia, there were almost all positive perceptions in this regard. It is noteworthy that the mission of the institution is "To promote vocational and technological education, public, quality, socially relevant, through teaching, research and

extension, aimed at the formation of *critical citizens, freelancers, and entrepreneurs*, committed to sustainability "(Brazil, 2012:11).

When respondents were asked about the significance of topics of the course or subsequent changes in their personal, professional and academic life, more than 90% of the responses were positive, indicating that the teaching of entrepreneurial skills and behaviours was responsible for making a difference for students. These results support Martins (2010) who states: "Education is a complex process that requires significant changes and investment in lecturer's training for the field of communication processes of the pedagogical relationship and the technologies' (Martins, 2010:136).

Respondents asked to submit which characteristics these lecturers presented with during the classes (table 2) responded very positively. The most striking were those relating to personal and interpersonal skills of lecturers, for example, perceptions include, are individuals who make a difference (29.3%), optimistic passionate about the work (17.3%) demonstrate leadership and team building (12.1%). These results contributing findings to earlier studies by Lenzi (2008) and Rezaei-Zadeh *et al.*, (2014). The decision-making skills, networking and organization had low perception, as this that shows that personal characteristics are essential to be considered entrepreneurial. Nevertheless, as Filion (1999), posits, such characteristics do not mean certainty in achieving success, success depends on other factors that are engendered.

Insert Table 2 about here:

Students were asked which educational activities had been implemented by lecturers they perceived as being "entrepreneurial". This question aimed to identify which

methods the perceived entrepreneurial lecturer effectively used in their classes, and the answers are presented in table 3.

Insert Table 3 about here:

Interesting to note that many students of post-secondary education made a connection between an entrepreneurial educator being one who employs traditional methods, along-side passion and dedication, with being entrepreneurial yet in other modalities literature suggests it is the most innovative teaching methods that are often perceived as highly positive. It appears the vocational mode of education considers traditional methods as fundamental (Samwel-Mwsalwiba, 2010) rather than the innovative and reflective methods (Carrier, 2007). One possible explanation is the age of students in this sample (29 years old) or the fact that vocational education primarily seeks to deliver learning on technical skills, i.e. the "how to". This finding suggests that the conceptual and interpersonal skills are only one part of the teaching canvas when it comes to an effective way of teaching vocational education in the classroom.

There was a high incidence of the term "dynamic" (8 incidents) when asked about the way lecturers teach their classes. As for the business plan, it appears that it deserves a mention only when the student points out that is an "opportunity to learn how to create a new venture according to my personal interests, it has contributed a lot in training" (Respondent 049). This result illustrates the difference between teaching entrepreneurship in higher education when compared with vocational. The studies from Russell, Atchison and Brooks (2008) suggest that competitions with business plans in higher education can contribute significantly to improving the

entrepreneurial education in institutions teaching and improve the understanding of the topic to the students, perhaps an even greater opportunity for business plan competitions might exist in the vocational education system. Of these respondents, 86.2% said that '*modus operandi*' of classes contributed to the improvement of teaching and learning in the classroom, through the interactive classes (Respondent 068), classes open for dialogue (Respondent 041), use of practical case studies (Respondent 021), become more critical (Respondent 032), lecturer realised the difficulties of students and helped them (Respondent 012). It was also found that 85% believe that lecturers who are already entrepreneurs in their academic, personal and professional life are particularly relevant in the classroom. Although also noted was the view that lecturers should appreciate changing student expectations, because 'today's students have different expectations for job satisfaction than employees of a generation ago' (Brown, 2015:185).

The generation of new ventures can be a result indirectly, of medium and long-term exposure to learning, even if offered to a wide array of disciplines. However, it is important to emphasise that this knowledge can be applied to intrapreneurs and enabling the process of generating ideas originated in the organisation (Hashimoto et al, 2010). When asked about how they perceived their lecturer, it was possible to categorise student responses into personal skills, didacticism, proximity, willingness to help, opening to dialogue and respect, table 4. Noteworthy is the complicity and openness between lecturers and students, "whenever I needed help from lecturers, they were always able to help me" (Respondent 19). Note that the word friendship was mentioned 6 times, this feeling quite often used to characterise a lecturer.

Insert Table 4 about here:

Through analysis of data, it was identified that personal skills are very apparent as a feature in the teaching-learning process. This finding corroborates with the study by Martins (2010), which states that lecturers with an entrepreneurial profile are able to arouse feelings, beliefs, perceptions and attitudes in students who change their behaviour. The perception of students about the entrepreneurial lecturer and discipline can be summarised by the statement: "The discipline contributes to our professional life, showing us ways to be taken and decisions to be taken"(Respondent 032).

The final questions were about the relevance of entrepreneurship education. Respondents were asked whether entrepreneurship can transform education, and the perception that this was possible was highly positive with 93.5% agreeing that the theme of power brings about social changes, but the qualitative question claimed only 7 respondents agreed that *entrepreneurship can transform education*.

Overall, the teaching of entrepreneurship in vocational education was perceived positively, as a student said: "Being entrepreneurial does not just mean having your own business, the student can be entrepreneurial where they work" (Respondent 30). Students realise that entrepreneurship principles are important both for their occupational and personal life: "Through the capacity to undertake not only for the market but for life" (Respondent 55).

Conclusions

This paper argues that entrepreneurship education provides particular benefits in different educational conditions and modes because it allows students to develop entrepreneurial behaviour for different vocations. It aimed to investigate, perceptions of the student in vocational education, towards lecturers with a vocationally relevant

entrepreneurial profile and if the didactical methods influences the attitude of students towards entrepreneurial activity. The paper concludes that it is necessary to differentiate the methods and practices used in entrepreneurial education practiced in higher and vocational education and that it should be reshaped according to the conditions that each education mode and system presents; secondary education, post-secondary and lifelong learning (Ballarine *et al.*, 2012; Vasconcelos *et al.*, 2012). Important to mention is that education is a contribution towards social transformation and inclusion, and that entrepreneurship can be a path to growth, development and social emancipation (Brazil, 2008; Pacheco, 2011; GEM Brazil, 2014).

The results of this case study revealed a student profile predominantly female in the range of 29 years old, who consider entrepreneurship education important for their career, and appropriate behavioural skills and personality traits of the lecturer or educator important – entrepreneurial profile - as key factors to awaken the student entrepreneurial behaviour (Martins, 2010).

The students perceived that entrepreneurial characteristics of lecturers which include being optimistic and passionate about what they do (Martins, 2010), leadership and team building capacity and exploring opportunities (Lenzi, 2008), make a difference for students (Rezaei-Zadeh *et al.*, 2014). The results show that students in post-secondary vocational education expect traditional teaching methods from entrepreneurial lecturers such as lectures, slides, videos, texts and exercises. The use of innovative methods of learning was not considered essential for their learning, contradicting the study of Neck and Greene, (2011), and Amancio-Vieira *et al.* (2013). This concluding point suggests that methods such as traditional lectures are notably important in vocational education and in contrast to the findings in higher

education, which claims that business plan, talks with entrepreneurs, visits in companies and start-ups and case studies are fundamental to entrepreneurship education. Therefore, the use of highly standardised and what are considered innovative methods can leave out those realities; a great variety of audiences live socially and as Fayolle points out 'from various socio-demographic backgrounds and with different levels of motivation and different aspirations towards entrepreneurship (Fayolle, 2013:696). The adult learner who is a post education vocational learner appears to demand a different experience. Given that the popular textbooks in entrepreneurship, for the most part, do not take into account the best combinations of modality and conditions, then these findings suggest that vocational entrepreneurship education and the subsequent entrepreneurial profile of the lecturer are matters worthy of further consideration (Fayolle, 2013).

To conclude this case study, there is scope for further research for example, what kind of training should educators receive in vocational entrepreneurship education and to what extent should recruitment practices consider the entrepreneurial profile of lecturers in vocational entrepreneurship education. Further studies involving longitudinal tracking of students in vocational education and future studies directed beyond higher education, such as entrepreneurship education in secondary education, post-secondary and lifelong learning might indeed be fruitful (Coyle, 2014). Further variations in methodological approaches will further enhance the understanding therefore, it is important to conduct studies using multivariate statistical analysis, as well as innovative qualitative methods.

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Table 1 Vocational education through the modalities

Levels of Vocational education	Age groups	Characteristics and features	Prior knowledge
Secondary	14 to 17 years old	technical courses offered into secondary education	basic education
Post-Secondary	more than 17	technical courses offered after secondary education	secondary education
Higher Education	more than 17	technological courses focused on practical solutions for labour market (non-academic).	secondary education
Lifelong Learning	no stipulation	short courses focused on knowledge to enable the student to get new skills.	no stipulation

Source: Law No. 9.394/96 Brazil (1996)

Table 2: Student Perception of Lecturer Characteristics

Characteristic Statements (<i>students asked to select one statement they associated with an entrepreneurial educator</i>).	Percentage
They know how to make decisions	0%
They are individuals who make a difference	29.3%
They know how to make the most of the opportunities	10.3%
They are determined and dynamic	5.2%
They are dedicated	6.9%
They are optimistic and passionate about what they do	17.3%
They are independent and build their own destiny	0%
They are leaders and team builders	12.1%
They are well-connected (networking)	0%
They are organized	3.4%
They have knowledge	10.3%
Create value for society	5.2%

Table 3: Didactic *modus operandi* Categories Entrepreneur Lecturer

Categories	Frequency	Frequent terms
Teaching Traditional	15	Research, case studies, slides, lecture, videos and work in the classroom.
Skills and personal values	13	Help, passion, enthusiast, dedication, persistence, engaging, motivating, effort, steadfastness, dedication, encouragement.
Dynamic class	8	Dynamic, engaging, innovative.
Interaction with students	7	interactive class participation, give opinions, exchange experiences.
Knowledge Lecturer	4	past experiences, market realities, real examples, linking theory and practice.
Using Business Plan	1	Opening new business.

Table 4: Categories of Student Perceptions of Lecturers

Categories	Frequency	Frequent terms
Personal skills	17	friendship, friendly, admiration, sympathy, enthusiasm, dedication.
Didacticism	14	professionalism, knowledge, dynamism, proper teaching.
Proximity	8	very close relationship, interaction to ask questions, lecturer attendance on the student, a lot of interaction.
Willingness to help	7	helping relationship, mutual aid, direct, special attention to the student, lecturer's aid.
Opening for dialogue	4	opening for talks, willingness to dialogue, closeness and complicity.
Respect	2	value to the student, mutual respect.